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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,898	06/27/2006	Steven Luzima Mutabazi	784-110	2246

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EXAMINER	
LEUNG, WAI LUN	
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2613	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/564,898	MUTABAZI, STEVEN LUZIMA	
	Examiner	Art Unit	
	DANNY W. LEUNG	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20060117*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. PCT/AU04/00941, filed on 7/14/2004.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 11-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Regarding claims 18 and 19, the phase "wherein said communication network is installed in Australia to provide at least one communication network between Sydney and Melbourne" and "covering the geography of Australia" rendered the claim indefinite because it reference to an object that is variable *(See MPEP 2173.05(b))*, since name of cities and countries may changed over time (for example, the city "Saigon" has changed its name to "Ho Chi Minh City"; the country "USSR" has ceased to exist; and the "thirteen colonies" is now the "United States"). Therefore, recitations relating to names of cities and names of countries (such as Sydney, Melbourne, and Australia), which could be variable over the years, render the claims indefinite, and one of ordinary skill in the art may not be able to determine the metes and bounds of the claims if and when the names of the cities / country changes.

Furthermore, the claims are rejected as being prolix *(See MPEP 2173.05(m))*, since it contain long recitations and unimportant details in such a way that the scope of the claimed invention is rendered indefinite thereby. Names of cities such as Sydney, Melbourne, etc. are not essential to the inventive concept regarding a data and voice digital communication network, but merely cite an intended use and application of the invention to a particular geographic location, which is not functionally limiting.

5. Regarding claims 12-17, the phase "wherein the logical configuration of a given hub is substantially independent of its physical connectivity to the transmission backbone network" render the claims indefinite. It is unclear for a person of ordinary skill in the art as to what is meant by "the logical configuration" being "substantially independent" of its "physical connectivity to the transmission backbone network". It is unclear as to what is meant by the claim term "substantially independent"; the specification fails to illustrate and specifically describe how the "logical configuration" is "substantially independent" of its "physical connectivity".

6. Regarding claims 11, 12, 15, and 18-20, it is unclear to a person of ordinary skill in the art as to how can "primary hubs" have a capacity of "one wavelength"; how can a "backbone communication bandwidth" be "less than one wavelength"; or how can "a transmission backbone" carry "less than a single wavelength". It is unclear as to **how** can light be transmitted "less than one wavelength", since it is a fact of nature that optical transmission over a fiber optic backbone be transmitted using light of at a particular wavelength, most often more than one wavelength. It is unclear as to what is meant by having "a backbone communication bandwidth" be "less than one wavelength".

Furthermore, regarding claims 11 and 20, it is unclear as to what is "having a capacity of one wavelength" *(is it the primary hubs having a capacity of one wavelength? Is it the addressed digital logic packets having a capacity of one wavelength? Is it the optical transmission means having a capacity of one wavelength? or is it the data and voice digital communication network having a capacity of one wavelength?)*

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Furthermore, the key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR International Co. v. Teleflex Inc.* note that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting *In re Kahn* 441 F.3d977,988,78 USPQ2d1329,1336(Fed.Cir.2006) stated that "[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."

8. Claims 11, 12, 15, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Deng et al.** *(US 2002019649 1A1)*, in view of **Ethridge et al.** *(US006353609B1)*.

Regarding claims 12 and 15, in so far as it is best understood in view of the above 112 problems, **Deng** discloses A data and voice digital communication network installation including a plurality of communication networking hubs, logically configured in a hierarchy of at least two tiers *(fig 4, ONT 114 being layer one networking hub; "hub" connected to ONT 114 being layer two networking hub),* the network installation comprising a transmission backbone network linking said hubs *(fig 4, "Remote Node" 112 linking the ONT 114 together),* wherein said linking includes at least one light transmitting fibre and having means to extract signals from and apply signals to the fibre with at least a proportion of end to end signals being carried by the fibre *(fig 4, fiber 116 are used; and remote node having means to extract signal from and apply signal to fibers 116, as shown in fig 5)*, said proportion being less than a single wavelength being carried by the transmission backbone *(paragraphs 31, each downstream WDM channel may be time division multiplexed),* said signals being extracted to and received from the communications networking hubs, at a plurality of selected locations, including at least one of which is not located at a primary hub *(fig 4, signal being extracted at plurality of "hub" (secondary hubs), which is not at the primary hub 114 (ONT))*, and wherein the logical configuration of a given hub *(fig 4, ONT),* is substantially independent of its physical connectivity to the transmission backbone network *(fig 4, METRO network @ 10Gb/s on the left, is independent from the ONT hubs)*. **Deng** does not disclose expressly wherein the communication networking hubs are packet communication networking hubs.

Ethridge, from the same field of endeavor, teaches a data and voice digital communication network installation including a plurality of packet communication networking hubs linking includes at least one light transmitting fibre *(col 6, ln 35-44, "the segmented voice and data packets are merged at the one or more remote cabinets 14 and switched to the appropriate ONU access device 16 over a single fiber connection 40")*. Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to implement the plurality of communication network hubs in **Deng**'s system as packet communication hubs suggested by **Ethridge**. The motivation for doing so would have been to be able to use packets to share the optical bandwidth of one wavelength between multiple hubs.

Regarding claim 18, in so far as it is best understood in view of the above 112 problems, **Deng** discloses A data and voice digital communication network *(fig 4),* comprising: at least one intermediate node *(fig 4, ONT 114)*; and a backbone connection connected to said at least one intermediate node *(fig 4, backbone 116),* wherein said at least one intermediate node is configured to provide access to a proportion of the backbone bandwidth being less than a full wavelength which provides for a bandwidth of at least approximately 2.5 gigabits per second *(paragraphs 31, the fiber link 116 may carry a single WDM channel, modulated at a data rate of 2.5Gb/s),*

Deng does not expressly teaches wherein the network is for effecting both digital and voice communication solely directed toward providing addressed digital packet transmission, wherein both digital and voice communication over such said backbone connection is by way of such addressed digital logic packets,

Ethridge, from the same field of endeavor, teaches a network is for effecting both digital and voice communication solely directed toward providing addressed digital packet transmission, wherein both digital and voice communication over such said backbone connection is by way of such addressed digital logic packets *(col 5, ln 31-38, the access distribution network can be any type of packet-switched network, routing voice and data packets from the central telephony gateway 12 to one ore more remote telephony gateways 16 according to the assigned MAC addressing)*. Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to provide addressed digital packet transmission onto **Deng**'s system so as to provide digital and voice communication as suggested by **Ethridge**. The motivation for doing so would have been to enhance transmission quality and bandwidth.

The combination of **Deng and Ethridge** does not expressly teaches wherein said communication network is installed in Australia to provide at least one communication network between Sydney and Melbourne. However, it would have been obvious for a person of ordinary skill in the art at the time when the invention was made to install the combination of **Deng and Ethridge's** network between any city and at any country or any location on earth, as a matter of intended use.

Regarding claim 19, in so far as it is best understood in view of the above 112 problems, **Deng** discloses A data and voice digital communication network installation providing a backbone communication bandwidth of at least 2.5 gigabytes/second *(paragraphs 31),* between geographically substantially dispersed locations being primary hubs *(fig 4),* , and having at least one light transmitting fibre through which the transmission is effected with means at respective ends, defining primary hubs *(fig 4, primary hubs are ONT 114 with transmitting fibre 116),* of

the fibre to effect an input and output of the communication signals at a rate which is at least the said bandwidth *(paragraphs 31),* and further having at least one intermediate means being a secondary hub which is substantially geographically dispersed from said locations of the primary hubs to effect an input and output *(fig 4, "hub" connected to ONT 114),* and means to then effect transmission of and signals from said secondary hub to a further geographically dispersed location at a rate which is less than the said bandwidth between said primary hubs *(paragraphs 31, TDM time slots at 155Mb/s),* said secondary hub being adapted to provide this lesser bandwidth rate by providing access to a proportion of the backbone communication bandwidth which is less than one wavelength *(paragraphs 31, the 16 TDM time slots shares one wavelength and distribute signals to the secondary hubs, the one wavelength is a single WDM channel received by the ONT).*

Deng does not disclose expressly wherein the transmission is through addressed digital logic packets into the fibre.

Ethridge, from the same field of endeavor, teaches a data and voice digital communication network wherein the transmission is through addressed digital logic packets into the fibre *(col 5, ln 31-38, the access distribution network can be any type of packet-switched network, routing voice and data packets from the central telephony gateway 12 to one ore more remote telephony gateways 16 according to the assigned MAC addressing).* Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to provide addressed digital packet transmission onto **Deng**'s system so as to provide digital and voice communication as suggested by **Ethridge**. The motivation for doing so would have been to enhance transmission quality and bandwidth.

The combination of **Deng and Ethridge** does not expressly teaches wherein said communication network is covering the geography of Australia. However, it would have been obvious for a person of ordinary skill in the art at the time when the invention was made to install the combination of **Deng and Ethridge's** network to cover any location on earth, as a matter of intended use.

Regarding claims 11 and 20, in so far as it is best understood in view of the above 112 problems, **Deng** discloses a data and voice digital communication network installation providing a backbone communication bandwidth *(fig 4)*, said network installation comprising: optical transmission means for transmitting communications signals of at least 2.5 gigabits per second *(paragraphs 29, transmitters 118, each transmitting at a respective wavelength, with wavelength spacing of 20nm from other ONT transmitters),* between geographically dispersed primary hubs *(fig 4, ONT 114),* and having a capacity of one wavelength *(paragraphs 29, it is inferred that each transmitter 118 is transmitting at a one wavelength capacity, due to the wavelength spacing requirement)*; at least one light transmitting fibre through which the transmission is effected between said primary hubs *(fig 4, fibers 116 connecting between ONTs 114)*; means positioned at said primary hubs for effecting an input and output of the communication signals at a rate which is at least said bandwidth *(fig 4, 1:16 switch in ONT 114)*; at least one intermediate means, defining a secondary hub which is substantially geographically dispersed from said primary hubs *(fig 4, a secondary hub "hub" connected to primary hub ONT 114),* ; and means for effecting transmission and receiving of signals from said secondary hub to a further geographically dispersed location at a rate less than said bandwidth between said primary hubs *(paragraphs 31, at the ONT, the data and/or voice communication is time division multiplexed*

using a 1:N switch to provided a plurality of lower rate data channels at 155mb/s); wherein said secondary hub is configured to provide the lesser bandwidth rate by providing access to a proportion of the backbone communication bandwidth which is less than one wavelength *(paragraphs 31, each of the subscriber is using less than one wavelength by using Time Division Multiplexed channels)*.

Deng does not disclose expressly wherein the data and voice digital communication network consisting of addressed digital logic packets, and to effect an input and output through addressed digital logic packets into the fibre.

Ethridge, from the same field of endeavor, teaches a data and voice digital communication network installation including consisting of addressed digital logic packets, and to effect an input and output through addressed digital logic packets into the fibre *(col 5, ln 31-38, the access distribution network can be any type of packet-switched network, routing voice and data packets from the central telephony gateway 12 to one ore more remote telephony gateways 16 according to the assigned MAC addressing)*. Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to provide addressed digital packet transmission onto **Deng**'s system so as to provide digital and voice communication as suggested by **Ethridge**. The motivation for doing so would have been to enhance transmission quality and bandwidth.

9. Claims 13-14, and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Deng et al.** *(US 20020196491A1)*, in view of **Ethridge et al.** *(US006353609B1), as applied to claims 12 and 15 as discussed above, and further* in view of **Malomsoky et al.** *(US006304639B1)*.

Regarding claims 13 and 16, **The combination of Deng and Ethridge** discloses the data and voice digital communication network installation in accordance to claims 12 and 15 as discussed above. **It** does not disclose expressly wherein a logical connectivity scheme is configured and operated to provide a first logical connectivity mesh linking each of a plurality of hubs comprising a first hierarchical tier of hubs, at least one second connectivity mesh linking each of a plurality of hubs comprising a second hierarchical tier of hubs to at least two hubs of said first tier. **Malomosky**, from the same field of endeavor, teaches a logical connectivity scheme is configured and operated to provide a first logical connectivity mesh linking each of a plurality of hubs comprising a first hierarchical tier of hubs *(fig 7, regional Transport Network Layer 703, having a mesh connecting the first tier of hubs 731),* at least one second connectivity mesh linking each of a plurality of hubs comprising a second hierarchical tier of hubs to at least two hubs of said first tier *(fig 7, local transport network layer 702 having a mesh connection between the second tier of hubs 721, and at least one of which is connected to two hubs 731 at the first tier layer as shown).* Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to wherein a logical connectivity scheme is configured and operated to provide a first logical connectivity mesh linking each of a plurality of hubs comprising a first hierarchical tier of hubs, at least one second connectivity mesh linking each of a plurality of hubs comprising a second hierarchical tier of hubs to at least two hubs of said first tier onto **the combination of Deng and Ethridge**'s system as suggested by **Malomosky**. The motivation for doing so would have been to achieve a balanced links by equalizing traffic probabilities *(see Malomosky's abstract).*

As to claims 14 and 17, **Malomosky** further teaches wherein said logical connectivity scheme further includes point-to-point connectivity between each of a plurality of hubs comprising a third hierarchical tier of hubs *(fig 7, customer premises network layer 701 being the third tier),* and at least one hub from a higher hierarchical tier and point-to-point connectivity between any hub and selected locations external to the communication network scheme *(fig 7, each of the network tier are connected to TMN 750)*.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to data and voice digital communication network in general.

(US-20070207809 or US-20040165889 or US-20040101302 or US-20020196491 or US-20020163687 or US-20020191250 or US-20020054589) or (US-6931011 or US-5790806 or US-5566169 or US-7340172 or US-7272321 or US-7149432 or US-7065298 or US-6889007 or US-6798993 or US-6678474 or US-6614568 or US-5790287 or US-6757268 or US-7120359 or US-7349629 or US-7171121 or US-7027733 or US-7386235 or US-7085261 or US-6353609) o US-6587239

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANNY W. LEUNG whose telephone number is (571)272-5504. The examiner can normally be reached on 11:30am-9:00pm Mon-Thur.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DANNY W LEUNG
Examiner
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5/11/2009
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